

FIG. 1A

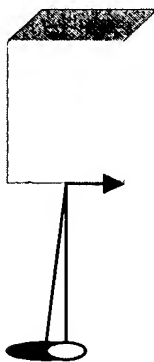


FIG. 1B



R2L Predominance
Bore Angled Left

FIG. 1C

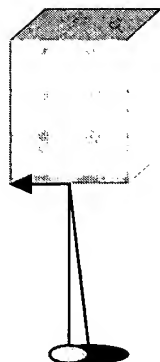


FIG. 2A

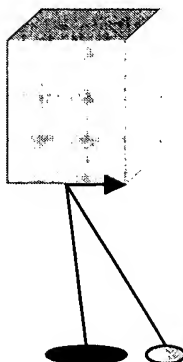


FIG. 2B



L2R Predominance
Bore Angled Right

FIG. 2C

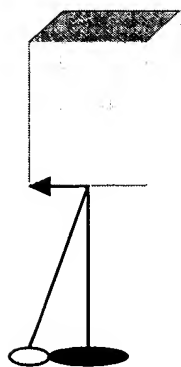


FIG. 3A

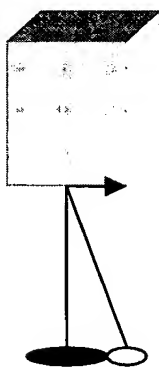
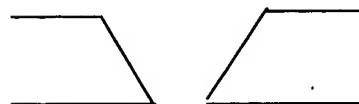


FIG. 3B



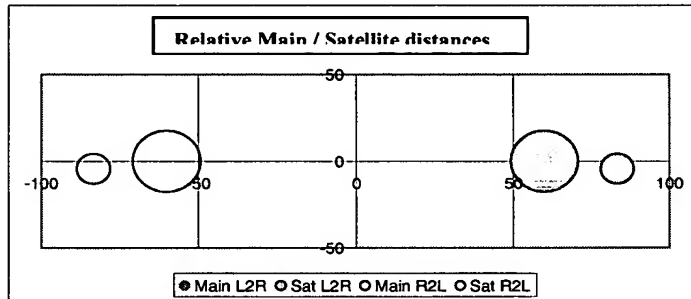
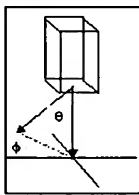
Balanced
Bore Symmetric

FIG. 3C

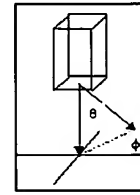
X misplacement = $\{ \text{Gap} \cdot \text{Carrier Velocity} / [\text{Jet Velocity} \cdot \cos(\theta)] \} + \text{Gap} \cdot \tan(\theta) \cdot \cos(\phi) + \text{xoffset}$
Y misplacement = $\text{Gap} \cdot \tan(\theta) \cdot \sin(\phi) + \text{yoffset}$
Gravity and Air turbulence ignored

Gap (microns)	1000			
Carrier Velocity (ips)	30			
	L2R		R2L	
	Main	Satellite	Main	Satellite
Jet Velocity (ips)	500	360	500	360
Theta (degrees)	0	0.25	0	0.25
Phi (degrees)	270	270	270	270
X misplacement (microns)	60	83.33413	-60	-83.33413
Y misplacement (microns)	0	-4.363351	0	-4.363351

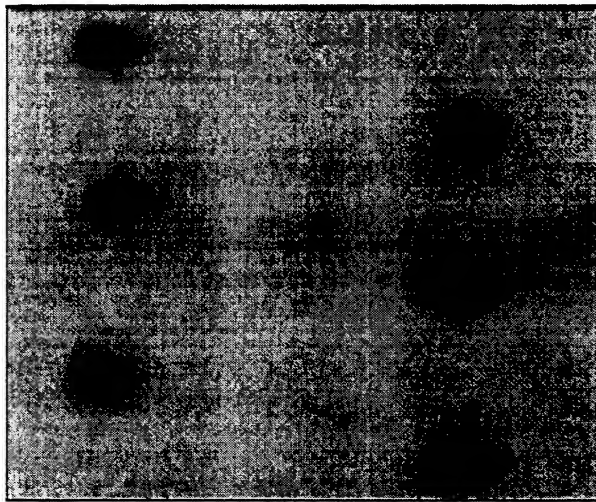
Carrier direction R2L



Carrier direction L2R



L2R



R2L

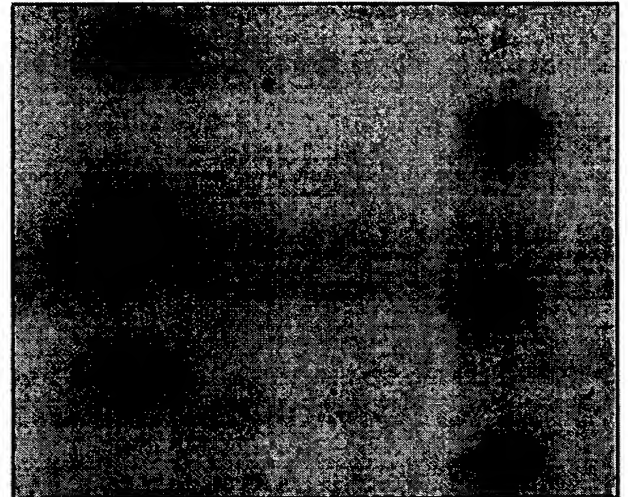
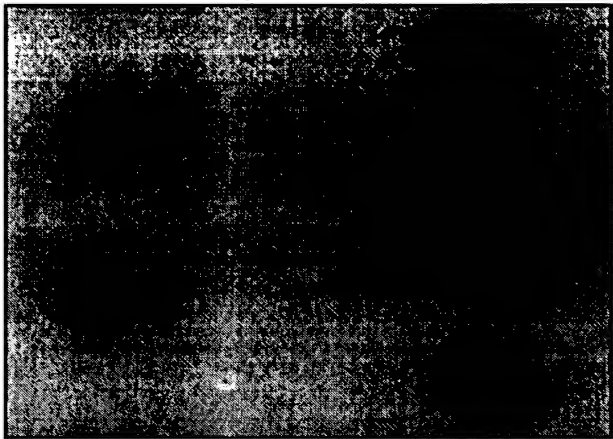


FIG. 4

L2R



R2L

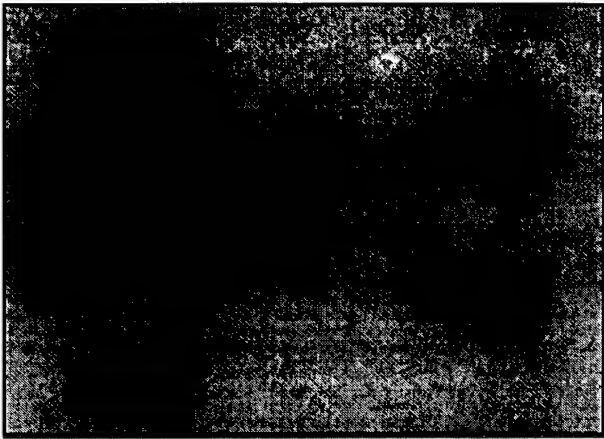


FIG. 5

X misplacement = $\{ \text{Gap} \cdot \text{Carrier Velocity} / [\text{Jet Velocity} \cdot \cos(\text{theta})] \} + \text{Gap} \cdot \tan(\text{theta}) \cdot \cos(\phi) + \text{xoffset}$
Y misplacement = $\text{Gap} \cdot \tan(\text{theta}) \cdot \sin(\phi) + \text{yoffset}$
Gravity and Air turbulence ignored

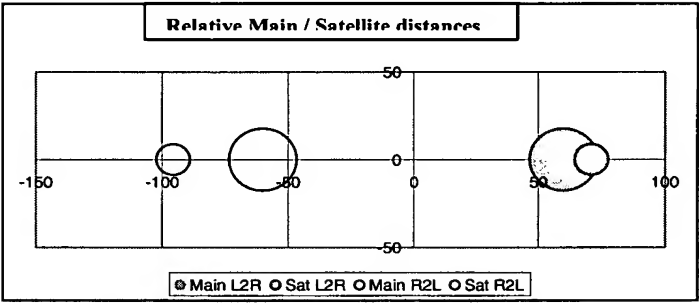
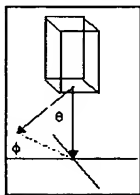
Gap (microns)
Carrier Velocity (ips)

1000
30

Jet Velocity (ips)
Theta (degrees)
Phi (degrees)
X misplacement (microns)
Y misplacement (microns)

L2R		R2L		Inputs
Main	Satellite	Main	Satellite	
500	360	500	360	
0	0.7	0	0.7	
180	180	180	180	
60	71.12164	-60	-95.55747	Outputs
0	1.5E-15	0	1.5E-15	

Carrier direction R2L



Carrier direction L2R

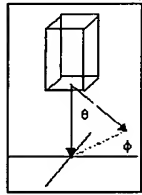
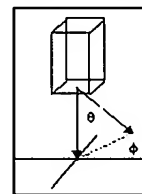
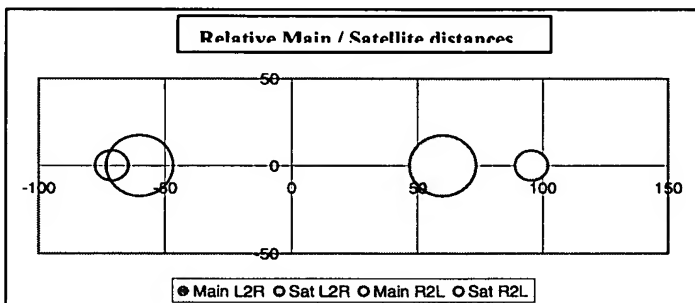
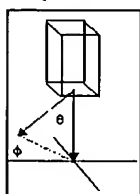


FIG. 6

Gravity and Air turbulence ignored

30

L2R		R2L		
Main	Satellite	Main	Satellite	
500	360	500	360	Inputs
0	-0.7	0	-0.7	
180	180	180	180	
60	95.55747	-60	-71.12164	Outputs
0	-1.5E-15	0	-1.5E-15	

**L2R**

R2L

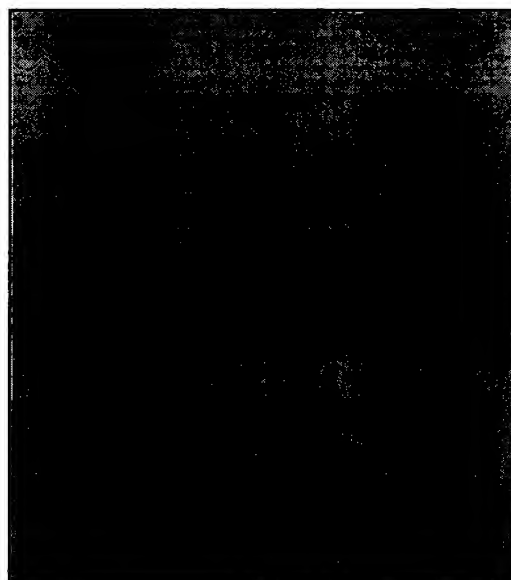


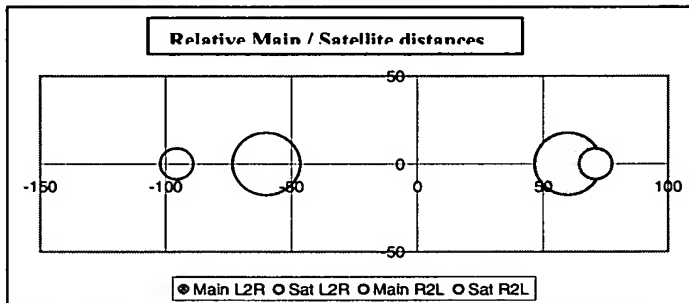
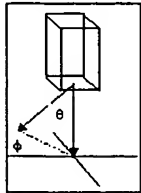
FIG. 8

X misplacement = (Gap*Carrier Velocity/[Jet Velocity*cos(theta)])+Gap*tan(theta)*cos(phi)+xoffset
Y misplacement = Gap*tan(theta)*sin(phi)+yoffset
Gravity and Air turbulence ignored

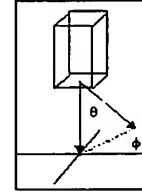
Gap (microns) 1000
Carrier Velocity (ips) 30

	L2R		R2L		
	Main	Satellite	Main	Satellite	
Jet Velocity (ips)	500	360	500	360	Inputs
Theta (degrees)	0	0.7	0	0.7	
Phi (degrees)	180	180	180	180	
X misplacement (microns)	60	71.12164	-60	-95.55747	Outputs
Y misplacement (microns)	0	1.5E-15	0	1.5E-15	

Carrier direction R2L



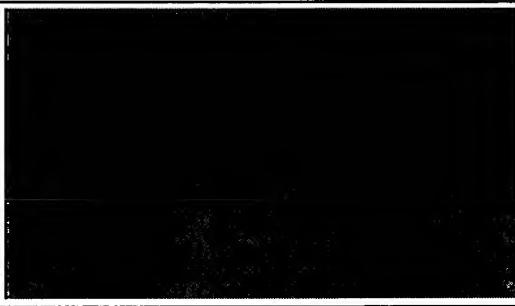
Carrier direction L2R



L2R



R2L



R2L Satellite Predominance

FIG. 9

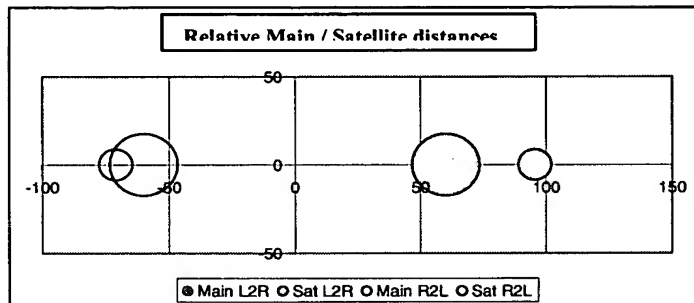
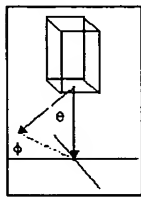
X misplacement = $\{ \text{Gap} * \text{Carrier Velocity} / [\text{Jet Velocity} * \cos(\text{theta})] \} + \text{Gap} * \tan(\text{theta}) * \cos(\phi) + \text{xoffset}$
Y misplacement = $\text{Gap} * \tan(\text{theta}) * \sin(\phi) + \text{yoffset}$
Gravity and Air turbulence ignored

Gap (microns)	1000			
Carrier Velocity (ips)	30			
	L2R		R2L	
	Main	Satellite	Main	Satellite
Jet Velocity (ips)	500	360	500	360
Theta (degrees)	0	-0.7	0	-0.7
Phi (degrees)	180	180	180	180
X misplacement (microns)	60	95.55747	-60	-71.12164
Y misplacement (microns)	0	-1.5E-15	0	-1.5E-15

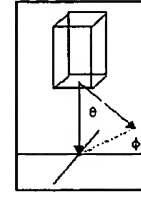
Inputs

Outputs

Carrier direction R2L

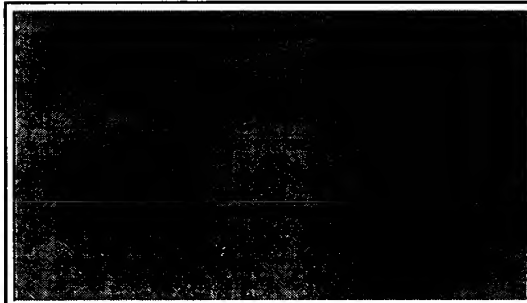


Carrier direction L2R



L2R Satellite Predominance

L2R



R2L

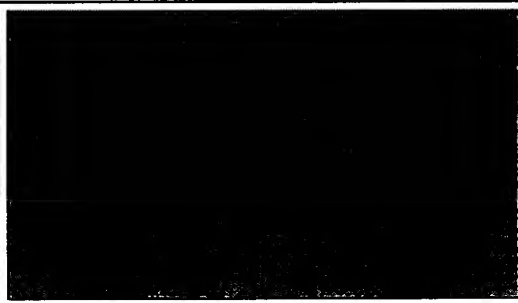


FIG. 10

Cyan

Cyan

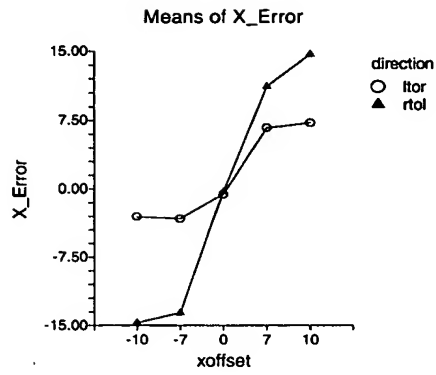


FIG. 11

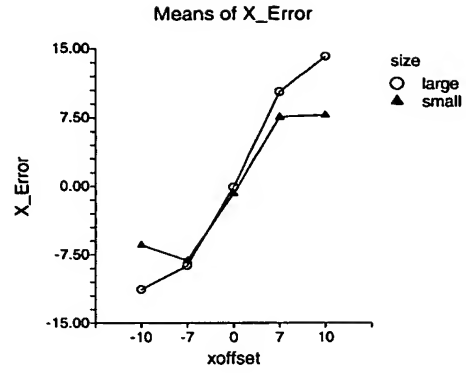


FIG. 12

Yellow

Yellow

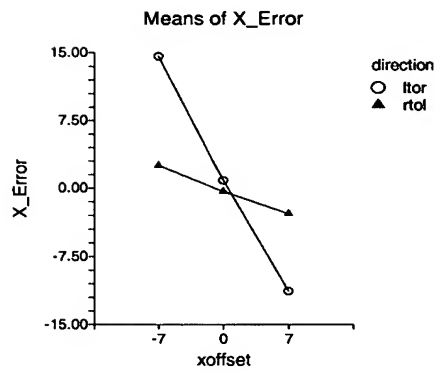


FIG. 13

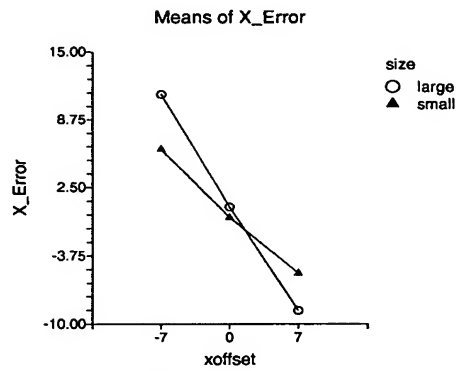


FIG. 14

Magenta main drops

Magenta satellites

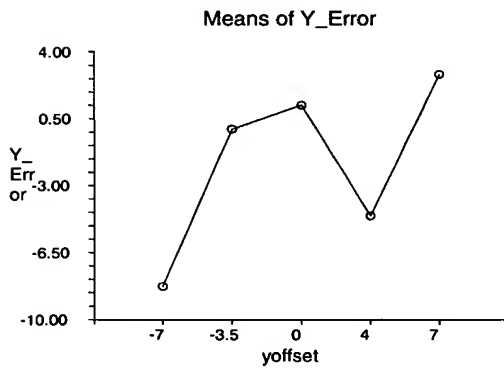


FIG. 15

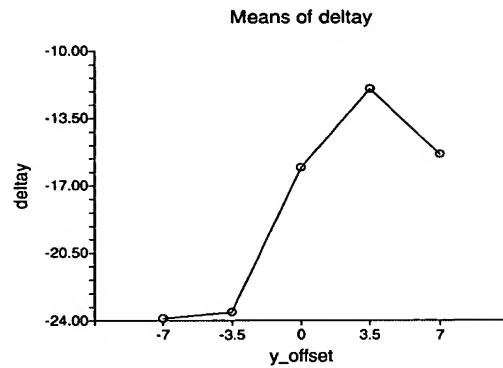


FIG. 16

X misplacement = $\{ \text{Gap} * \text{Carrier Velocity} / [\text{Jet Velocity} * \cos(\theta)] \} + \text{Gap} * \tan(\theta) * \cos(\phi) + \text{xoffset}$
Y misplacement = $\text{Gap} * \tan(\theta) * \sin(\phi) + \text{yoffset}$
Gravity and Air turbulence ignored

Gap (microns)	1000			
Carrier Velocity (ips)	30			
	L2R		R2L	
	Main	Satellite	Main	Satellite
Jet Velocity (ips)	500	360	500	360
Theta (degrees)	1	1	1	1
Phi (degrees)	180	180	180	180
X misplacement (microns)	42.55407	65.89096	-77.4642	-100.8011
Y misplacement (microns)	2.14E-15	2.14E-15	2.14E-15	2.14E-15

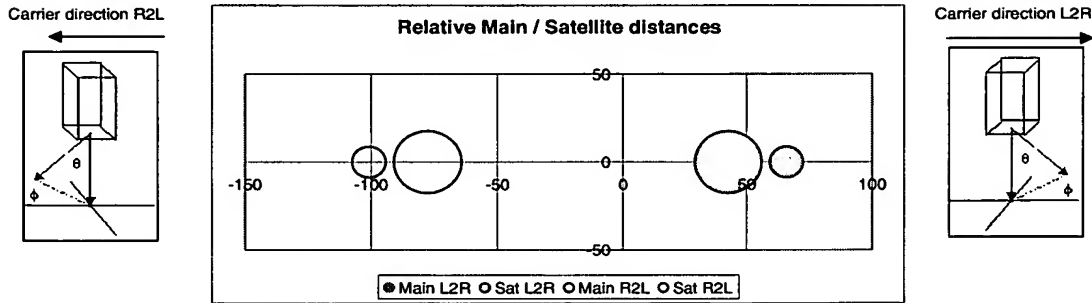


FIG. 17

X misplacement = $\{ \text{Gap} * \text{Carrier Velocity} / [\text{Jet Velocity} * \cos(\theta)] \} + \text{Gap} * \tan(\theta) * \cos(\phi) + \text{xoffset}$
Y misplacement = $\text{Gap} * \tan(\theta) * \sin(\phi) + \text{yoffset}$
Gravity and Air turbulence ignored

Gap (microns)	1000			
Carrier Velocity (ips)	30			
	L2R		R2L	
	Main	Satellite	Main	Satellite
Jet Velocity (ips)	500	360	500	360
Theta (degrees)	-1	-1	-1	-1
Phi (degrees)	180	180	180	180
X misplacement (microns)	77.4642	100.8011	-42.55407	-65.89096
Y misplacement (microns)	-2.14E-15	-2.14E-15	-2.14E-15	-2.14E-15

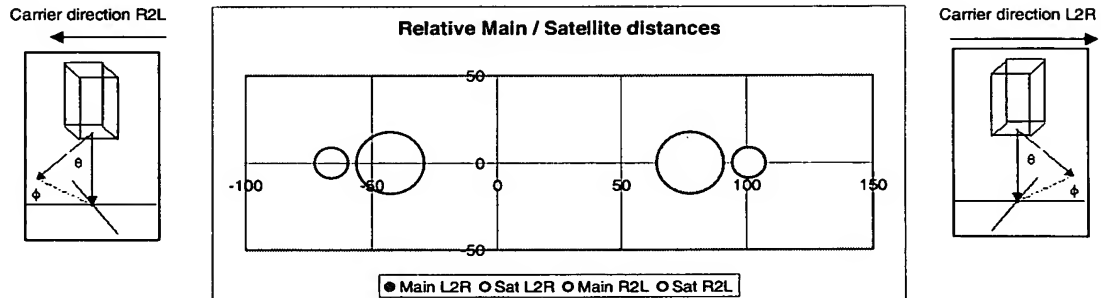


FIG. 18

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Inventor: Gibson et al.
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Title: Balanced Satellite Distributions

X misplacement = (Gap*Carrier Velocity/[Jet Velocity*cos(theta)]) + Gap*tan(theta)*cos(phi) + xoffset
Y misplacement = Gap*tan(theta)*sin(phi) + yoffset
Gravity and Air turbulence ignored

Gap (microns)	1000					
Carrier Velocity (ips)	30					
	L2R		R2L			
	Main	Satellite	Main	Satellite		
Jet Velocity (ips)	500	360	500	360	Inputs	
Theta (degrees)	0	-2.5	0	-2.5		
Phi (degrees)	0	90	0	90		
X misplacement (microns)	60	83.41272	-60	-83.41272		Outputs
Y misplacement (microns)	0	-43.66094	0	-43.66094		

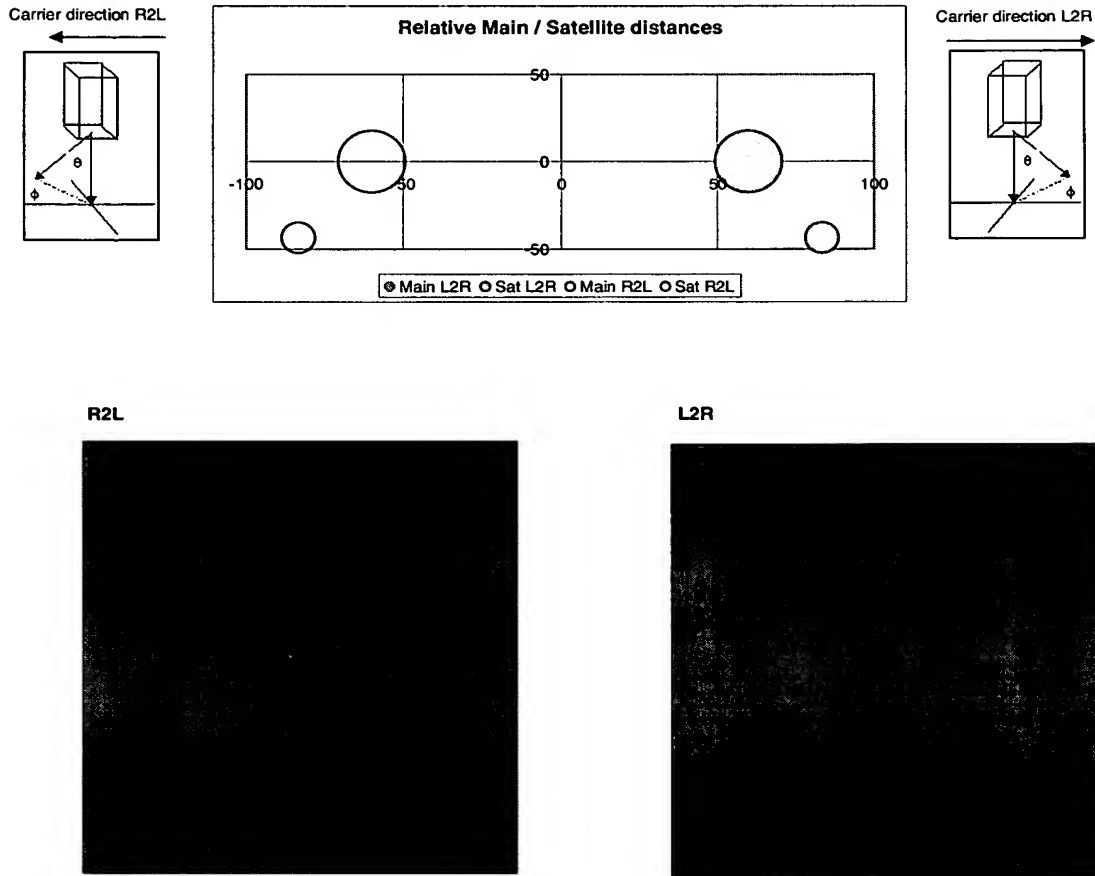


FIGURE 19

X misplacement = [Gap*Carrier Velocity/[Jet Velocity*cos(theta)]]+Gap*tan(theta)*cos(phi)+xoffset
Y misplacement = Gap*tan(theta)*sin(phi)+yoffset
Gravity and Air turbulence ignored

Gap (microns)	1000					
Carrier Velocity (ips)	30					
	L2R		R2L			
	Main	Satellite	Main	Satellite		
Jet Velocity (ips)	500	360	500	360	Inputs	
Theta (degrees)	0	2.5	0	2.5		
Phi (degrees)	0	90	0	90		
X misplacement (microns)	60	83.41272	-60	-83.41272	Outputs	
Y misplacement (microns)	0	43.66094	0	43.66094		

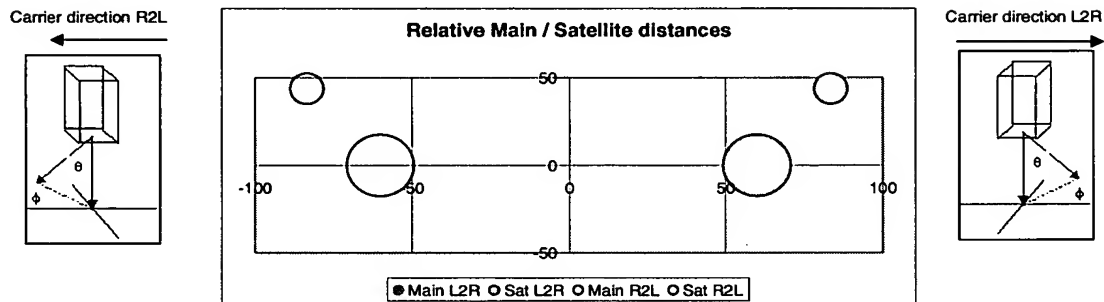


FIG. 20

$X \text{ misplacement} = \{ \text{Gap} * \text{Carrier Velocity} / [\text{Jet Velocity} * \cos(\theta)] \} + \text{Gap} * \tan(\theta) * \cos(\phi) + \text{xoffset}$
 $Y \text{ misplacement} = \text{Gap} * \tan(\theta) * \sin(\phi) + \text{yoffset}$
Gravity and Air turbulence ignored

Gap (microns)	1000		300		500		300		500		300	
Carrier Velocity (ips)	30		30		30		30		30		30	
	L2R		L2R		R2L		R2L		R2L		R2L	
	Main 1	Sat 1	Main 2	Sat 2	Main1	Sat 1	Main 2	Sat 2	Main 2	Sat 2	Main 2	Sat 2
Jet Velocity (ips)	500	360	500	300	500	300	500	300	500	360	500	360
Theta (degrees)	0	0	0	0	0	0	0	0	0	0	0	0
Phi (degrees)	0	180	0	180	0	180	0	180	0	180	0	180
X misplacement (microns)	80	103.3333	40	80	80	-40	-80	-103.3333	-80	-103.3333	-80	-103.3333
x offset	20	20	-20	-20	20	20	-20	-20	20	20	-20	-20
Y misplacement (microns)	0	0	0	0	0	0	0	0	0	0	0	0
y offset	0	0	0	0	0	0	0	0	0	0	0	0

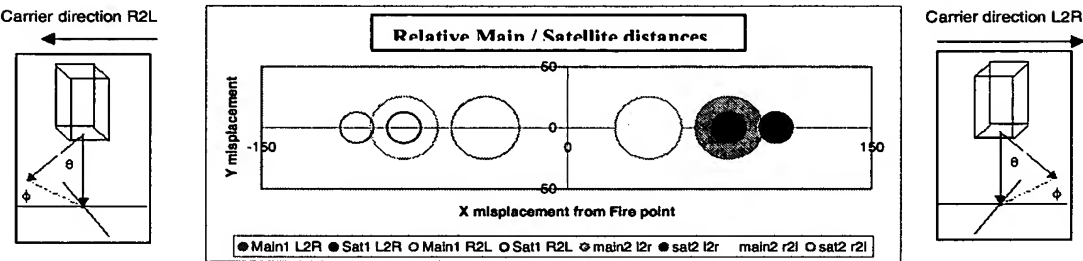


FIG. 21

R2L



L2R



FIG. 22

X misplacement = $[\text{Gap} \cdot \text{Carrier Velocity} / [\text{Jet Velocity} \cdot \cos(\theta)]] + \text{Gap} \cdot \tan(\theta) \cdot \cos(\phi) + \text{xoffset}$
Y misplacement = $\text{Gap} \cdot \tan(\theta) \cdot \sin(\phi) + \text{yoffset}$
Gravity and Air turbulence ignored

Gap (microns) 1000
Carrier Velocity (ips) 30

	L2R		L2R		R2L		R2L	
	Main 1	Sat 1	Main 2	Sat 2	Main1	Sat 1	Main 2	Sat 2
Jet Velocity (ips)	500	360	500	360	500	360	500	360
Theta (degrees)	0	0	0	0	0	0	0	0
Phi (degrees)	0	180	0	180	0	180	0	180
X misplacement (microns)	60	83.33333	60	83.33333	-60	-83.33333	-60	-83.33333
x offset	0	0	0	0	0	0	0	0
Y misplacement (microns)	70	70	-70	-70	70	70	-70	-70
y offset	70	70	-70	-70	70	70	-70	-70

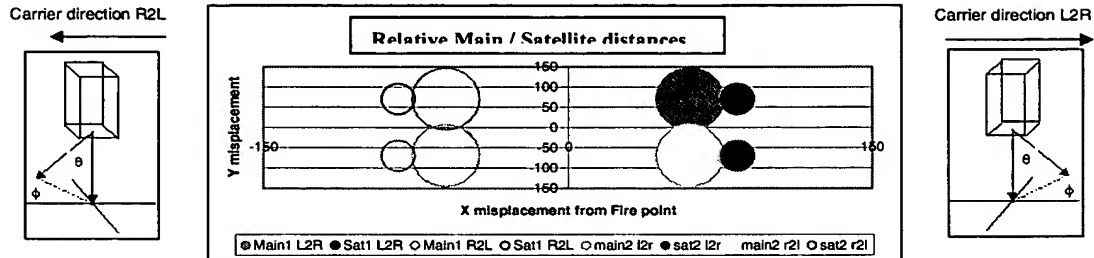


FIG. 23

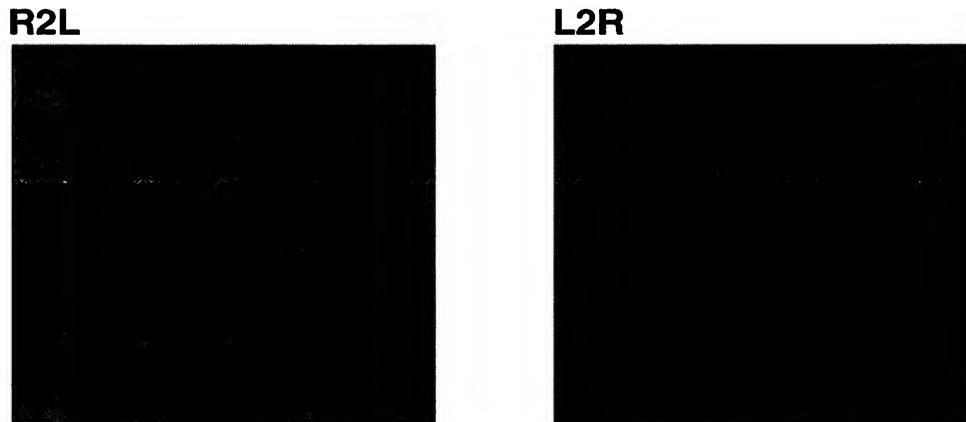


FIG. 24

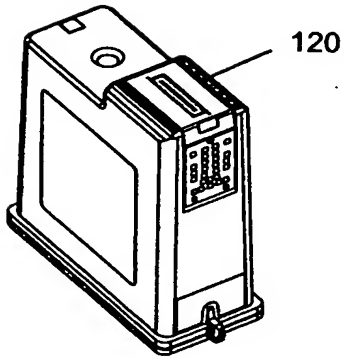


FIG. 25

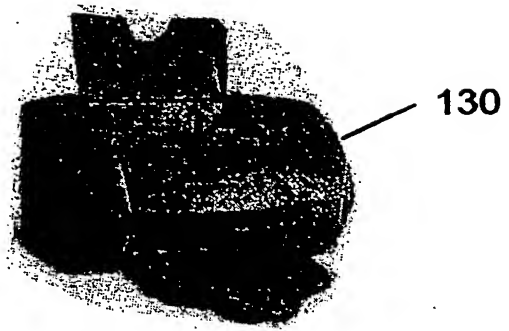


FIG. 26